

REMARKS

In the Office Action mailed December 13, 2004, claims 33, 34, and 37-40 stand rejected under 35 USC §103(a) as being unpatenable over Yap et al. (US Patent 6,781,533), and claims 35-36 stand rejected under 35 USC §103(a) as being unpatenable over Yap et al. in view of Hellberg (US Patent 6,094,458). Applicants respectfully disagree with the Examiner's analysis.

More particularly, claim 33 is directed to a sigma-delta-type analog-to-digital converter comprising at least one of:

an integration stage comprising a resistor, **a first heterojunction thyristor device providing high gain amplification**, and a feedback capacitor; and

**a second heterojunction thyristor device adapted to contemporaneously perform 1-bit analog-to-digital conversion and electrical-to-optical conversion of the result of the 1-bit analog-to-digital conversion.**

Nowhere does the cited prior art teach or suggest these features. The Examiner admits that Yap et al. does not explicitly state the use of heterojunction thyristor device, but goes on to state the use of thyristor devices as electro-optical components are well known. This analysis is flawed as the Examiner has failed to establish a prima facie case of obviousness.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. See MPEP §2143.01. The Federal Circuit has rejected the "common knowledge" of one skilled in the art as a substitute for specific evidence that the prior art suggests an invalidating combination of references. *In re Lee*, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002).

The Examiner's conclusory statements fail to meet all three basic criteria. Instead, such statements mistakenly rely on "common knowledge". Nowhere has the Examiner adequately addressed the factual issue of a combination of references that teach or suggest the invention as well as teach or suggest a motivation to combine references. Thus, the Examiner has failed to establish a prima facie case of obviousness with respect to claim 1. The Examiner cannot assume that the prior art contains the recited elements when such elements are not clearly shown in the prior art. See, *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (Bd. App. 1979) (Examiner's burden of supporting his holding of unpatentability is not met by "assuming" presence of missing component). Pursuant to MPEP §2144.03, the applicant respectfully requests that the Examiner cite a proper combination for the missing elements or withdraw the rejection.

Similar arguments apply to the rejection of claims 35-36.

The dependent claims 34-40 are patentable over the cited prior art for those reasons advanced above with respect to independent claim 33 from which they depend, and for reciting additional features neither taught nor suggested by the prior art.

In light of all of the above, it is submitted that the claims are in order for allowance, and prompt allowance is earnestly requested. Should any issues remain outstanding, the Examiner is invited to call the undersigned attorney of record so that the case may proceed expeditiously to allowance.

Respectfully submitted,



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